TSP ultrasonic welding systems
SONIQTWIST® – torsional ultrasonic welding systems to meet the highest standards

Benefits of SONIQTWIST®
- Suitable for plastic and metal welding
- Easy to access even in small spaces
- No membrane effect
- Gentle, low-vibration technique, e.g. for sensors
- For round and angular parts

TSP welding presses
- Various welding modes providing maximum flexibility
- Process control and statistical evaluation
- High accuracy
- Ergonomic and user-friendly
- Quick application changeover
- Robust and reliable
TELSONIC’s patented torsional welding technique is an extremely gentle technique for supplying energy that significantly reduces the amount of unwanted vibration transferred to the welding object. With this development, it is now also possible to gently weld delicate products such as sensors. The extremely stable TELSONIC press design can be extended with modules and operated in combination with the TCS5 controller to guarantee you maximum control of your process. A range of welding modes and trigger types enable optimum joint welding. Welding results are monitored in quality windows and automatically evaluated both graphically and statistically.

Application and industries
- Welding and fusion forming thermoplastics
- Cut’n’seal processes for textiles, fleeces and foils
- Metal welding connections: point and circumferential welding geometry
- Low-vibration welding of electronic components
- Producing the peel-off function, e.g. aluminium covers
- Seal welding aluminium packaging without plastic coating

TELSONIC’s torsional technique succeeds where conventional longitudinal ultrasonic technology reaches its limits.

Features and benefits
- Suitable for plastic and metal parts
- Good accessibility as only one vertical movement is required
- Both round and angular parts can be welded
- Low component vibrations ideal for sensors
- No membrane effect (unwanted fusion and perforation), e.g. for films and parts with thin walls
- Solid welding on thin-walled visible parts without marking on either side
- Compact fusion formation and therefore low particle formation (medical technology)
- Strong and tight welding seams even if the joint is contaminated
- Helium-tight welding seams possible
- High welding seam strength
- Short cycle times
- Operation via touchscreen
- Flexible user administration
- CE compliant
### Technical features

#### Torsional ultrasonic welding components

<table>
<thead>
<tr>
<th>Torsional resonator</th>
<th>SE2010TC</th>
<th>TR2.4</th>
<th>TR6.5</th>
<th>TR10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak power</td>
<td>1.2 kW</td>
<td>2.4 kW</td>
<td>6.5 kW</td>
<td>10 kW</td>
</tr>
<tr>
<td>Frequency</td>
<td>20 kHz</td>
<td>19 kHz</td>
<td>20 kHz</td>
<td>20 kHz</td>
</tr>
<tr>
<td>Converter cooling</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Generator type</td>
<td>MAG-T020012</td>
<td>MAG-T019024</td>
<td>SG-22-6500</td>
<td>SG-22-10000</td>
</tr>
<tr>
<td>Press type</td>
<td>TSP750</td>
<td>TSP3000</td>
<td>TSP8000</td>
<td></td>
</tr>
</tbody>
</table>

#### TSP torsional welding presses

<table>
<thead>
<tr>
<th></th>
<th>TSP750</th>
<th>TSP3000</th>
<th>TSP8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welding power</td>
<td>600 N</td>
<td>2500 N</td>
<td>7900 N</td>
</tr>
<tr>
<td>Height adjustment</td>
<td>200 mm</td>
<td>250 mm</td>
<td>150 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>100 mm</td>
<td>100 mm</td>
<td>80 mm</td>
</tr>
<tr>
<td>Dimensions W x H x D</td>
<td>642 x 1098 x 677 mm</td>
<td>762 x 1316 x 854 mm</td>
<td>680 x 1802 x 843 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>80 kg</td>
<td>130 kg</td>
<td>320 kg</td>
</tr>
<tr>
<td>Working area W x D</td>
<td>370 x 250 mm</td>
<td>420 x 415 mm</td>
<td>440 x 450 mm</td>
</tr>
<tr>
<td>Levelling table to align the welding plane</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Adapter plinth height (optional)</td>
<td>100 / 200 mm</td>
<td>200 / 300 mm</td>
<td>–</td>
</tr>
<tr>
<td>Contact shut-off module for Cut’n’seal processes</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
</tbody>
</table>

#### TCS5 controller

<table>
<thead>
<tr>
<th></th>
<th>TSP750</th>
<th>TSP3000</th>
<th>TSP8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various welding modes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Configuration of multi-stage amplitude and power profiles</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Clear method administration</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Quality windows for welding parameters</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Statistical evaluation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Configurable I/O automation to control peripheral processes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Integrated monitoring and process control for the noise protection cabin</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Intuitive graphical interface</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
A selection of proven applications

- PA, round or angular housing, with internal electronic tight weld, e.g. sensors
- PP, inflated part with uneven surface, weld on foil – medical component
- PP/EPDM, welding in bumper distance sensor holder – high strength, no impressions visible on the face side. Previously painted components can also be welded.
- ABS, tight welding of shock absorbers, through the oil medium
- PP, labelling machines, cosmetics industry, tight welding
- PP, fittings on automotive interiors
- PA, fixing components on Duroplast honeycomb plates
- PA6.6GF30, high-pressure container, 80 mm diameter
- PC/ABS, automotive loudspeakers, a ring weld to replace numerous rivets
- MiM, intricate work on valve seats
- PE, foil valves
- Calibration of injection-moulded components
- CU, gas generator for airbags
- Lithium polymer batteries
- CU, high-performance transistors
- CU, AL, cable connections in the automotive industry

Further applications at www.telsonic.com

Accessories

- Levelling table for optimum alignment of the welding plane
- Contact shut-off module for Cut’n’seal tasks
- Adapter plinth for larger welded products
- Noise protection cabin for sound insulation
- Material transport to protect part surfaces

You can locate our worldwide representatives at www.telsonic.com